reaction to cardiovascular symptoms than those in the control group—for example, some may have requested admission to a hospital. This also seems unlikely as it would have led to a general increase in admissions in several other diagnostic categories.

In the light of these considerations it seems reasonable to interpret the changes that took place in the patterns of admission as an impact on health resulting from reactions to the closure. The study showed changes in the weighting of the individual diagnostic groups with a fall in the number of accidents and a small rise in cardiovascular diseases. These may have been a result of changes in the study group's living conditions—from being characterised by a high risk work environment to psychosocial stresses associated with closure, job insecurity, job changes, and unemployment.

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Role of community pharmacies in prevention of AIDS among injecting drug misusers: findings of a survey in England and Wales

Alan Glanz, Clare Byrne, Paul Jackson

Abstract

Objective—To determine the current and potential roles of community pharmacists in the prevention of AIDS among misusers of injected drugs.

Design—Cross sectional postal survey of a one in four random sample of registered pharmacies in England and Wales.

Setting—Project conducted in the addiction research unit of the Institute of Psychiatry, London.

Subjects—2469 Community pharmacies in the 15 regional health authorities in England and Wales.

Main outcome measures—Willingness of pharmacists to sell injecting equipment to known or suspected misusers of drugs; pharmacists' attitudes to syringe exchange schemes, keeping a "sharps" box for use by misusers of drugs, and offering face to face advice and leaflets; and opinions of community pharmacists on their role in AIDS prevention and drug misuse.

Results—1946 Questionnaires were returned, representing a response rate of 79%. This fell short of the target of one in four pharmacies in each family practitioner committee area in England and Wales, and total numbers of respondents were therefore weighted in inverse proportion to the response rate in each area. The findings disclosed a substantial demand for injecting equipment by drug misusers. After weighting of numbers of respondents an estimated 676 of 2434 pharmacies were currently selling injecting equipment and 65 of 2415 (3%) were participating in local syringe exchange schemes; only 94 of 2410 pharmacies (4%) had a sharps box for used equipment. There was a high degree of concern among pharmacists about particular consequences

of drug misusers visiting their premises, along with a widespread acceptance that the community pharmacist had an important part to play.

Conclusions—Promoting the participation of community pharmacists in the prevention of AIDS among misusers of injected drugs is a viable policy, but several problems would need to be overcome before it was implemented.

Introduction

An important role for the community pharmacy (high street chemist) has been identified by bodies considering policy on AIDS and misuse of drugs.^{1,2} Needle sharing among drug addicts is a key factor in the spread of HIV infection.^{3,4} Several studies have found that the most common reason reported for needle sharing is lack of availability of injecting equipment.^{5,6} The supply of sterile needles and syringes is thus a crucial issue in AIDS prevention.

Several pilot "syringe exchange" schemes in varying institutional forms were launched in England and Scotland by the government in the spring of 1987.⁷ A policy of promoting the participation of pharmacies in the sales of needles and syringes has now been adopted by the government in relation to Scotland.⁸ In 1986 the Royal Pharmaceutical Society revised its restrictive policy on the sale of needles and syringes in the light of knowledge of the association of the spread of AIDS with sharing of injecting equipment. Now pharmacists should "exercise professional discretion each time a request for syringe or needles is made."⁹

There is little evidence about the pattern of response among community pharmacists. This study therefore aimed at providing a picture for England and Wales of

Institute of Psychiatry,
Addiction Research Unit,
London SE5 8AF
Alan Glanz, MSc, lecturer
Clare Byrne, BA, research
worker
Paul Jackson, BSc, research
worker

Correspondence to:
Mr A Glanz.

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community pharmacists' participation in and opinions about supplying injecting equipment and other activities implicated in AIDS prevention strategies.

Methods

In this cross sectional study a postal questionnaire survey of a one in four stratified random sample of community pharmacies in England and Wales was undertaken in October and November 1988. The sample was drawn from a complete listing of registered premises supplied by the Royal Pharmaceutical Society. The premises were grouped by areas served by family practitioner committees and a set of random numbers generated to select one in four premises from each area.

The questionnaire was addressed to the "Pharmacist in Charge" and included a prepaid addressed envelope

TABLE I—Numbers of known or suspected drug misusers who asked to purchase needles and syringes in past four weeks [95% confidence interval given in square brackets]

Regional health authority (England and Wales)	Respondents	Mean No per pharmacy	Estimated total No for all pharmacies (sample responses $\times 4$)
Northern	140	0.3	185
Yorkshire	159	0.9	574
Trent	200	0.8	602
East Anglian	67	1.3	334
North West Thames	203	4.8	3 871
North East Thames	214	2.6	2 245
South East Thames	186	4.3	3 196
South West Thames	156	1.6	999
Wessex	112	1.5	677
Oxford	60	0.8	197
South Western	151	1.3	769
West Midlands	251	1.0	996
Mersey	123	4.3	2 145
North Western	201	3.2	2 547
Wales	163	0.5	310
Total	2 386	2.1	19 647 [16 552 to 22 741]
Missing cases	84		

TABLE II—Pharmacies prepared to sell and pharmacies currently selling needles and syringes to known or suspected misusers of injected drugs [95% confidence intervals given in square brackets]

Regional health authority (England and Wales)	No of respondents	No (%) prepared to sell	No of respondents	No (%) currently selling
Northern	140	94 (67)	140	20 (14)
Yorkshire	159	116 (73)	166	39 (23)
Trent	204	136 (67)	208	25 (12)
East Anglian	66	51 (77)	69	25 (36)
North West Thames	203	163 (80)	205	76 (37)
North Thames	219	178 (81)	216	81 (38)
South East Thames	184	150 (82)	190	71 (37)
South West Thames	161	131 (81)	159	56 (35)
Wessex	114	96 (84)	115	37 (32)
Oxford	62	43 (69)	62	16 (26)
South Western	159	106 (67)	158	38 (24)
West Midlands	251	178 (71)	253	57 (23)
Mersey	125	86 (69)	126	45 (36)
North Western	204	139 (68)	206	70 (34)
Wales	158	115 (73)	161	18 (11)
Total	2407	1782 (74 [72 to 76])	2434	676 (28 [26 to 30])
Missing cases	62			

TABLE III—Position of pharmacies with respect to syringe exchange, "sharps" box, and information leaflets [95% confidence intervals given in square brackets]

	No of respondents	No (%) that currently do	No (%) that would be willing	No (%) that would not be willing
Participate in local syringe exchange scheme	2415	65 (3 [2-3])	1259 (52 [48-54])	1091 (45 [43-47])
Have sharps box on premises for use by injecting drug misusers	2410	94 (4 [3-4])	907 (38 [36-40])	1409 (58 [57-60])
Accept injecting equipment already in drug misuser's sharps box	2384	53 (2 [2-3])	1025 (43 [41-45])	1306 (55 [53-57])
Supply information leaflets concerning drug misuse and prevention of AIDS	2445	1665 (68 [66-70])	721 (29 [28-31])	59 (2 [2-3])
Offer face to face advice concerning drug misuse and prevention of AIDS	2431	550 (23 [21-24])	1568 (64 [63-66])	313 (13 [12-14])

for return together with a covering letter explaining the background and purpose of the survey. The confidentiality of responses was emphasised. Two reminder letters with questionnaires and envelopes were sent to non-respondents after intervals of about seven working days.

The base number of respondents for the results presented below in the text and tables is a weighted total, weighting being inversely proportional to the response rate within each family practitioner committee area (see appendix). The analysis assumes that non-responding pharmacies would provide the same pattern of responses as responding pharmacies within a family practitioner committee area. This may lead to an "overoptimistic" national picture (see appendix). For analysis family practitioner committees were aggregated into the 15 regional health authorities.

Results

A total of 2469 questionnaires were sent and 1946 pharmacies returned completed questionnaires. We regard this response (79%) as satisfactory for such a survey. Response rates ranged from 88% in the South Western region to 69% in the North East Thames region. Only six family practitioner committee areas had response rates below two thirds, and they were widely distributed geographically.

DEMAND FOR INJECTING EQUIPMENT

Community pharmacies experience a considerable demand on the part of drug misusers for injecting equipment. Around 35% (843/2386) of pharmacies reported that in the previous four weeks at least one drug misuser had asked them to sell needles and syringes. Table I shows that an estimated nearly 20 000 drug misusers had asked to purchase injecting equipment from pharmacies in England and Wales in a four week period. Caution is required in regard to this figure because of possible multiple counting of individual drug misusers who may visit more than one pharmacy in a given period. On the other hand, expressed demand will to some extent reflect existing pharmacy policies on the sale of syringes to drug misusers and will thus underestimate potential demand.

SALE OF INJECTING EQUIPMENT AND OTHER ACTIVITIES

Table II shows that around three quarters of pharmacists were prepared at their "professional discretion" to sell needles and syringes to known or suspected drug misusers. This suggests that some 7000 (95% confidence interval 6957 to 7295) pharmacies in England and Wales could be outlets for injecting equipment. Given that 28% of pharmacies (676/2434) were currently selling needles and syringes (table II), some 2700 pharmacies (95% confidence interval 2573 to 2879) in England and Wales were presumably conducting such sales.

Very few pharmacies were currently participating in a local syringe exchange scheme, though more than half of those that were not would be willing to do so if such a scheme was organised in their area (table III). Despite the obvious importance of safe disposal of used injecting equipment, however, most pharmacies would not be willing to have a "sharps" box on the premises (table III). Only 9% (59) of pharmacies currently selling needles and syringes also had a sharps box for use by drug misusers; 38% (251) would be willing and 53% (353) would not be willing to do so. Thus the pharmacies actually selling injecting equipment were no more prepared than pharmacies in general to accept some responsibility for its safe disposal. The 65 pharmacies currently participating in an exchange scheme were far more prepared to house a

TABLE IV—*Opinions on issues concerning role of community pharmacist in prevention of AIDS and drug misuse*

	No of respondents	No (%) who strongly agree	No (%) who tend to agree	No (%) who tend to disagree	No (%) who strongly disagree
Community pharmacist has important part to play concerning drug misuse and prevention of AIDS	2431	940 (39)	1249 (51)	195 (8)	48 (2)
Community pharmacists cannot be expected to take part in AIDS prevention with drug misusers unless they are remunerated for it	2396	756 (32)	911 (38)	547 (23)	182 (8)
Drug misusers visiting my premises will have a damaging effect on my business	2424	556 (23)	1084 (45)	717 (30)	67 (3)
If drug misusers visit my premises there is likely to be an increase in theft	2408	515 (21)	1016 (42)	807 (34)	70 (3)
I need training in how to deal with drug misusers who visit my premises	2406	780 (32)	1245 (52)	294 (12)	87 (4)

sharps box; 40 currently did so, 17 would be willing, and only nine would not be willing to do so.

Many pharmacies supplied information leaflets concerning drug misuse and AIDS prevention, and a substantial majority of pharmacists seemed prepared to undertake the more demanding task of offering face to face advice on these matters (table III).

OPINIONS ON ISSUES CONCERNING DRUG MISUSE AND AIDS PREVENTION

The questionnaire presented pharmacies with selected statements concerning aspects of the pharmacist's role, and respondents were asked to indicate their opinion by endorsing "strongly agree," "tend to agree," "tend to disagree," or "strongly disagree." Table IV presents the results.

How do opinions relate to practice? Three groups of pharmacies were identified for investigating the possibility of an association between views held and their position regarding AIDS prevention activities. The three groups were (a) pharmacies currently selling syringes or participating in a syringe exchange scheme (current suppliers), (b) those not currently doing so but prepared to sell or participate in a scheme (willing pharmacists), and (c) pharmacies not willing to do either (non-suppliers). To pinpoint statistical differences among the three groups the opinion items were treated as continuous scales and Scheffe's simultaneous test procedure at the 1% level of significance was used.

What clearly distinguished the current suppliers and willing pharmacists from the non-suppliers was their opinion regarding the consequences of drug misusers visiting their premises. The proportions agreeing or strongly agreeing that business would be damaged were 61% (405/664) among current suppliers, 63% (747/1186) among willing pharmacists, and 90% (416/463) among non-suppliers; this difference between non-suppliers and the other two groups was significant (overall $F(2, 2309)=68.71$). Surprisingly, almost two thirds of supplying and potential supplying pharmacies expected negative commercial consequences to ensue. On the specific risk of theft the pattern of opinion was similar, 62% (407/660) of current suppliers, 58% (683/1180) of willing pharmacists, and 80% (368/459) of non-suppliers agreeing or strongly agreeing that there was likely to be an increase in theft if drug misusers visited their premises. In this aspect also there was a significant difference between the non-suppliers and the other two groups (overall $F(2, 2296)=36.10$).

Discussion

Researchers assessing the pilot syringe exchange schemes in England and Scotland report that clients have a much lower baseline level of risk behaviour than other samples of injectors, suggesting the need for other strategies to reach these higher risk injectors.¹⁰

The community pharmacy has several advantages for this objective. It is highly accessible; it avoids possible stigma associated with specialist services for drug misusers; and it allows for the anonymity of the ordinary commercial transaction. Furthermore, the number of drug misusers reported by pharmacists as asking to purchase injecting equipment suggests the likelihood of widespread utilisation of pharmacy outlets. The evidence of this study also indicates that most pharmacists are willing to supply or sell needles and syringes, provide information materials, and offer advice to injecting drug misusers. By this strategy sterile injecting equipment and appropriate information could reach many higher risk drug misusers.

In developing such a strategy, however, it would be necessary to settle several important issues: (1) education, offering clear guidance to pharmacists in order to alleviate the apprehension at dealing with drug misusers, strongly expressed in this survey; (2) disposal, ensuring that supply of injecting equipment by the pharmacy is matched by planned provision for safe disposal which takes into account the widespread reluctance to accept this responsibility expressed by community pharmacists in the survey; (3) remuneration, tackling the potential conflict between the public health commitment and the commercial interests of community pharmacists indicated by their concern about the consequences for business of participating in this work; (4) liaison, facilitating links with local specialist services both for pharmacy support and for referral of drug misusers. The simple supply of injecting equipment to drug misusers at community pharmacies requires strengthening as an AIDS prevention programme with a framework for delivering a message on injecting and sexual risk behaviour and facilitating modification of risk behaviour.

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Appendix

The data were weighted within each sample stratum—that is, family practitioner committee area—to compensate for the fact that the final response fell somewhat short of the sample target of one in four registered community pharmacies in each family practitioner committee area in England and Wales. The calculations are all on a properly weighted sample, but for simplicity of presentation weighted numbers of respondents have been rounded to integers. In some cases this results in small discrepancies between actual totals and the totals of the printed (rounded) figures.

The figures for response are those that would have been obtained had the full one in four sample responded, on the assumption that non-responding pharmacies would provide the same pattern of responses as responding pharmacies. We have no direct evidence on which to estimate the magnitude of any non-response bias that may have resulted. Analysis by mailing wave, however, showed a tendency for response to become more "negative" in later response waves. For example, 76% of first mailing respondents were prepared to sell injecting equipment, 71% of second, and 64% of third ($\chi^2=13.91$, $p<0.001$; tau $c=0.07$, $p<0.001$).

We have supplied confidence intervals for estimates of means, proportions, and totals for the "population" of pharmacies in England and Wales. With a sample size of one in four of the population the confidence intervals need to be adjusted by the finite population correction (used when a sample is a high proportion of the target population).¹¹ In addition, the calculations need to take account of the weighted base, an adjustment which can be approximated by calculating an effective sample size. In the present case these two correction factors effectively cancelled out, and we have

therefore quoted confidence intervals calculated by the standard simple formula.

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Suprascapular nerve block for chronic shoulder pain in rheumatoid arthritis

Paul Emery, Simon Bowman, Lucy Wedderburn, Rodney Grahame

Department of Rheumatology, University of Birmingham, Birmingham B15 2TJ
Paul Emery, MRCP, senior lecturer and consultant

Department of Rheumatology, Guy's Hospital, London
Simon Bowman, MRCP, senior house officer
Lucy Wedderburn, MRCP, senior house officer
Rodney Grahame, FRCP, consultant

Correspondence to: Dr Emery.

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The shoulder is commonly affected in rheumatoid arthritis, which may lead to pain at rest and considerable morbidity.¹ Intra-articular injections can be used to treat isolated inflammation of the shoulder but are of dubious value in longstanding disease. The main sensory nerve to the shoulder, the suprascapular nerve, is accessible for percutaneous nerve block.² This is performed routinely by anaesthetists and used commonly in pain clinics but is rarely performed by rheumatologists. We undertook a double-blind study to compare the suprascapular nerve block using steroid and bupivacaine with a conventional intra-articular injection of steroid and lignocaine.

Patients, methods, and results

We studied patients with rheumatoid arthritis according to the 1987 criteria of the American Rheumatism Association³ in whom both shoulders were painful and restricted in movement. The shoulders were randomised for severity. Patients received a suprascapular nerve block (40 mg methylprednisolone mixed with 0.5% bupivacaine and adrenaline; total volume 2 ml) with a sham intra-articular injection in one shoulder. In the other shoulder they received a standard intra-articular injection (40 mg methylprednisolone plus 1% lignocaine; total volume 2 ml) with a sham suprascapular nerve block. Pain and stiffness were assessed on visual analogue scales, the pain index (a modified Ritchie index⁴) calculated, and movement assessed at 0, 1, 4, and 12 weeks.

Twenty patients were recruited to the study; one was unsuitable and two were lost to follow up, so 17 patients (14 women) and 34 shoulders were available for follow up. All injections were performed by the same person (PE), and all assessments were performed blind by the same assessor. The patients had a mean age of 67 (range 53-84) and had had rheumatoid arthritis for 17 (4-29) years. Sixteen were positive for rheumatoid factor, eight had nodules, and 17 had erosions on radiography. The mean erythrocyte sedimentation rate was 48 (3-91) mm in the first hour.

The table shows the results of the treatments. The nerve block improved both pain and the pain index throughout the study, though the pain score was significantly improved only at one and four weeks and the pain index only at one week. The intra-articular injection resulted in a significant improvement in the pain score at one week but did not affect the pain index. After both injections stiffness was significantly im-

proved only at one week. The nerve block produced a substantial improvement in abduction and flexion, though this was significant only for passive abduction at four weeks. The results of a questionnaire on activity did not alter during the study. At 12 weeks 12 patients thought that pain relief had been greater in the shoulder in which the nerve block had been performed and two that it had been greater in the shoulder in which intra-articular injection had been performed; three were undecided.

Comment

Compared with intra-articular steroid injection suprascapular nerve block resulted in significant benefits in terms of duration of pain relief, the pain index, and the range of movement. Stiffness improved for only one week, which suggests that the improvement in pain was unlikely to be a non-specific effect of steroids. Furthermore, the two injections produced different patterns of response.

The nerve block produced an improvement in movements of up to 20% in flexion and abduction. Active movement was greater than passive both before and after injection, possibly because protective spasm occurred when passive movement was attempted. Pain relief produced a greater improvement in passive

Effect of suprascapular nerve block and intra-articular injection of steroid on pain and stiffness in 17 patients with chronic shoulder pain in rheumatoid arthritis. Figures are mean (SE) values

	Weeks after injection			
	0	1	4	12
Pain†:				
Nerve block	59 (7)	33 (8)***	44 (8)*	47 (9)
Intra-articular injection	54 (6)	40 (7)*	47 (9)	53 (9)
Pain index:				
Nerve block	1.52 (0.3)	0.76 (0.2)*	1.05 (0.3)	1.11 (0.2)
Intra-articular injection	1.23 (0.3)	1.17 (0.4)	1.41 (0.3)	1.00 (0.2)
Stiffness†:				
Nerve block	55 (7)	31 (6)**	53 (7)	56 (9)
Intra-articular injection	47 (7)	35 (7)*	44 (9)	55 (9)
Movement (degrees):				
Abduction:				
Active:				
Nerve block	53 (5)	60 (5)	61 (5)	54 (5)
Intra-articular injection	61 (6)	66 (5)	63 (4)	60 (5)
Passive:				
Nerve block	50 (7)	59 (7)	62 (5)*	55 (5)
Intra-articular injection	59 (7)	60 (4)	61 (5)	58 (4)
Flexion:				
Active:				
Nerve block	67 (6)	78 (7)	74 (4)	68 (7)
Intra-articular injection	73 (7)	77 (7)	77 (5)	69 (5)
Passive:				
Nerve block	63 (7)	71 (8)	67 (7)	60 (7)
Intra-articular injection	71 (8)	75 (8)	67 (7)	66 (8)
Rotation:				
Active:				
Nerve block	36 (6)	33 (4)	35 (4)	30 (4)
Intra-articular injection	36 (5)	41 (4)	39 (4)	36 (3)
Passive:				
Nerve block	36 (6)	34 (5)	33 (5)	32 (5)
Intra-articular injection	36 (5)	42 (4)	35 (4)	36 (4)

Significance of difference in value from baseline value: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

† Measured on visual analogue score (0 = none, 100 = severe).